Hydrocephalus in Children: Causes, Symptoms & Modern Treatment Options

As parents, your child's health is always your biggest concern. If you've come across the term *hydrocephalus* and want simple, reliable information, this guide is for you. Hydrocephalus is a condition where excess cerebrospinal fluid (CSF) builds up in the brain. Although CSF normally protects and nourishes the brain, too much of it increases pressure inside the skull and can affect brain function.

Hydrocephalus can affect newborns, infants, and older children. Some babies are born with it, while others develop it due to infections, bleeding, or injuries. Early identification and prompt treatment can significantly improve a child's development and quality of life.

What Is Hydrocephalus?

Hydrocephalus occurs when CSF accumulates in the brain's ventricles (fluid-filled cavities), causing them to enlarge and put pressure on surrounding brain tissues.

There are two main types found in children:

- **Congenital Hydrocephalus:** Present at birth due to genetic abnormalities or improper brain development.
- **Acquired Hydrocephalus:** Occurs after birth because of infections, bleeding, trauma, or tumors.

Causes of Hydrocephalus in Children

Several factors can lead to hydrocephalus, including:

- **Birth Defects:** Structural issues in the brain present at birth, such as spina bifida.
- **Infections:** Meningitis, encephalitis, or infections during pregnancy can cause inflammation that blocks CSF flow.
- **Brain Bleeding:** Premature babies are more likely to experience intraventricular hemorrhage.

- **Brain Tumors or Cysts:** These may obstruct normal CSF pathways.
- **Head Injuries:** Trauma can disrupt the drainage of CSF due to bleeding or swelling.

Understanding the underlying cause helps doctors plan the right treatment.

Symptoms of Hydrocephalus

Symptoms vary by age and how quickly the condition progresses.

In Infants:

- Rapid increase in head size
- Bulging or tense soft spot (fontanelle)
- Vomiting or irritability
- Excessive sleepiness
- Difficulty feeding
- Downward fixed gaze (“sunsetting eyes”)

In Toddlers & Older Children:

- Persistent headaches
- Nausea and vomiting
- Difficulty walking or balancing
- Poor coordination
- Delayed speech, learning, or motor skills
- Behavioral or personality changes

If you notice these symptoms, medical evaluation is essential.

How Hydrocephalus Is Diagnosed

Doctors use a range of imaging and diagnostic tests such as:

- **Ultrasound:** Useful for newborns with soft skull bones.
- **MRI:** Provides detailed images to assess CSF buildup.
- **CT Scan:** Quick imaging to detect enlarged ventricles.
- **Lumbar Puncture:** Rarely used to check CSF pressure or infection.

Early diagnosis improves treatment outcomes.

Modern Treatment Options for Hydrocephalus

Surgery is the primary treatment for hydrocephalus and helps relieve pressure by restoring normal CSF flow.

1. Ventriculoperitoneal (VP) Shunt Surgery

- A thin tube (shunt) is placed to drain excess fluid from the brain to the abdomen.
- Helps regulate fluid levels and protects the brain.
- Requires periodic follow-ups to ensure it works properly.

2. Endoscopic Third Ventriculostomy (ETV)

- A minimally invasive procedure where a small opening is created in the brain's ventricular floor.
- Allows CSF to bypass the blockage and flow normally.
- Suitable for certain types of hydrocephalus.

Both procedures are effective and require long-term monitoring to ensure proper function.

Meet Dr. Harshal Agrawal – Pediatric Neurosurgeon in Thane

If your child has been diagnosed with hydrocephalus, expert guidance is crucial. **Dr. Harshal Agrawal**, a pediatric neurosurgeon in Thane, specializes in diagnosing and treating hydrocephalus and other neurological disorders in children. He provides compassionate care, clear explanations, and advanced treatment options tailored to each child's needs.

Parents seeking consultation, evaluation, or treatment can connect with Dr. Agrawal's clinic for support and expert care.